



## FEDERAL COMMUNICATIONS COMMISSION

### 47 CFR Part 15

[ET Docket Nos. 14-165, 20-36, 04-186 and GN Docket No. 12-268 ; FCC 22-6; FR ID 85914]

**Unlicensed Operations in the Television Bands, Repurposed 600 MHz Band, 600 MHz Guard Bands and Duplex Gap, and Channel 37; Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions; Unlicensed White Space Device Operations in the Television Bands; Unlicensed Operation in the TV Broadcast Bands**

**AGENCY:** Federal Communications Commission.

**ACTION:** Proposed rule.

**SUMMARY:** In this document, the Commission's proposes to seek comment on the database re-check interval that should apply to narrowband fixed and Mode II personal/portable white space devices and to mobile white space devices, which were first authorized by the Commission in 2020. In particular, the Commission seeks comment on whether these types of devices, which operate in the TV bands, should be subject to the hourly re-check interval the Commission requires for fixed and Mode II personal portable devices in the TV bands, the daily re-check interval to which these devices are currently subject, or some other re-check interval.

**DATES:** Comments are due on or before [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER] and reply comments are due on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may submit comments, identified by ET Docket No. 14-165, GN Docket No. 12-268, ET Docket No. 20-36, or ET Docket No. 04-186 by any of the following methods:

- *Electronic Filers:* Comments may be filed electronically using the Internet by accessing the ECFS: <http://apps.fcc.gov/ecfs/>.

- *Paper Filers:* Parties who choose to file by paper must file an original and one copy of each filing.

Filings can be sent by commercial overnight courier, or by first-class or overnight U.S.

Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9050 Junction Drive, Annapolis Junction, MD 20701.
- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 45 L Street NE, Washington, DC 20554
- Effective March 19, 2020, and until further notice, the Commission no longer accepts any hand or messenger delivered filings. This is a temporary measure taken to help protect the health and safety of individuals, and to mitigate the transmission of COVID-19. See FCC Announces Closure of FCC Headquarters Open Window and Change in Hand-Delivery Policy, Public Notice, DA 20-304 (March 19, 2020).

<https://www.fcc.gov/document/fcc-closes-headquarters-open-window-and-changes-hand-delivery-policy>

*People with Disabilities:* To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to [fcc504@fcc.gov](mailto:fcc504@fcc.gov) or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (TTY). **FOR**

**FURTHER INFORMATION CONTACT:** Hugh VanTuyl, Office of Engineering and Technology, at (202) 418-7506, [Hugh.VanTuyl@fcc.gov](mailto:Hugh.VanTuyl@fcc.gov). For information regarding the Paperwork Reduction Act (PRA) information requirements contained in this document, contact Cathy Williams, Office of Managing Director, at (202) 418-2918 or [Cathy.Williams@fcc.gov](mailto:Cathy.Williams@fcc.gov).

**SUPPLEMENTARY INFORMATION:** This is a summary of the Commission's Further Notice of Proposed Rulemaking (*FNPRM*), ET Docket No. 14-165, FCC 22-6, adopted on

January 25, 2022 and released on January 26, 2022. The full text of this document is available for public inspection by downloading the text from the Commission's web site at <https://www.fcc.gov/document/fcc-takes-action-unlicensed-white-space-device-database-issues>.

### **Comment Filing Procedures**

Pursuant to §§ 1.415 and 1.419 of the Commission's rules, 47 CFR 1.415, 1.419, interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS). *See Electronic Filing of Documents in Rulemaking Proceedings*, 63 FR 24121 (1998).

### ***Ex Parte* Rules – Permit-But-Disclose**

Pursuant to § 1.1200(a) of the Commission's rules, the proceeding this *FNPRM* initiates shall be treated as a "permit-but-disclose" proceeding in accordance with the Commission's *ex parte* rules. Persons making *ex parte* presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentation must (1) list all persons attending or otherwise participating in the meeting at which the *ex parte* presentation was made, and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter's written comments, memoranda or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to Commission staff during *ex parte* meetings are deemed to be written *ex parte* presentations and must be filed consistent with § 1.1206(b). In proceedings governed by § 1.49(f) or for which the Commission has made available a method of electronic

filing, written *ex parte* presentations and memoranda summarizing oral *ex parte* presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (*e.g.*, .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission's *ex parte* rules.

*Paperwork Reduction Act.* This document does not contain new or modified information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. In addition, therefore, it does not contain any new or modified information collection burden for small business concerns with fewer than 25 employees, pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, see 44 U.S.C. 3506(c)(4).

## **Synopsis**

### **INTRODUCTION**

The Commission has initiated this *FNPRM* to seek comment on the database re-check interval that should apply to narrowband fixed and Mode II personal/portable white space devices and to mobile white space devices, which were first authorized by the Commission in 2020. In particular, the Commission seeks comment on whether these types of devices, which operate in the TV bands, should be subject to the hourly re-check interval the Commission require for fixed and Mode II personal portable devices in the TV bands, the daily re-check interval to which these devices are currently subject, or some other re-check interval.

### **BACKGROUND**

When the Commission adopted the push notification rule in 2015, there were two classes of white space devices that had to contact a white space database to obtain a list of available channels - fixed and Mode II personal/portable devices. The Commission did not address narrowband or mobile white space devices.

The Commission established the rules for narrowband and mobile white space devices in 2020. Mobile devices, which operate within a bounded area at power levels comparable to fixed

devices, are a new class of white space device. Narrowband devices are a subset of fixed or personal/portable devices, and are subject to technical rules which permit narrower channel bandwidths than other fixed and personal/portable devices. The Commission, consistent with the existing rules, required narrowband and mobile devices to comply with a once daily database check. Narrowband devices also would have had to comply with the push notification requirement if it had not been waived. The Commission did not address whether mobile devices are subject to the push notification rule. Thus, after careful consideration, and out of an abundance of caution, the Commission now seeks to build a record on whether the Commission should modify the database re-check requirements for these types of devices.

## **DISCUSSION**

*Narrowband devices.* In its recent *ex parte* submission, Microsoft argues that requiring narrowband fixed white space devices used for IoT applications to comply with an hourly database re-check would negatively impact battery life, limit potential form factors, and increase the costs of those devices. It requests that the Commission maintain its existing requirement that narrowband fixed devices be required to check the white space database once a day to ensure capturing wireless microphone reservations rather than hourly. Microsoft states that this requirement would only apply to master narrowband devices because client devices would obtain available channel information from master devices that obtain information directly from a white space database, similar to the operation of other Mode I white space devices. Microsoft also requests that a narrowband fixed white space device be allowed to continue operating until 11:59 PM the following day if the device is unable to contact the database. Microsoft states that keeping the current requirement in place for these devices will particularly benefit precision agriculture applications such as by enabling farmers to obtain information about the conditions of their fields during a disaster when connectivity to the internet has been lost. However, NAB opposes Microsoft's requests, arguing that Microsoft has not shown that narrowband white space devices are less likely to cause harmful interference or that the use cases for narrowband devices

will largely be confined to rural areas.

The Commission seeks comment on the database re-check interval that should be required for narrowband white space devices. Should the Commission retain the current requirement for a once daily database check and allow continued operation until 11:59 PM the following day if a device is temporarily unable to contact the database? Should the Commission instead require narrowband devices to comply with the same hourly re-check interval as other fixed and Mode II devices, or would another re-check interval be more appropriate? If the Commission allows a longer database re-check interval for narrowband devices than for other fixed and personal/portable devices, to which specific devices should it apply? Should it apply to both fixed and Mode II personal/portable narrowband devices? Should it apply to battery-powered devices only or to AC powered devices as well? Are there any other related database re-check rules that the Commission should modify for narrowband devices?

The Commission seeks comment on the impact of the database re-check interval on the protection of licensed wireless microphones. Microsoft argues that the existing technical rules for narrowband devices (low power, narrow bandwidth, limited transmission time, the requirement for three contiguous vacant channels) are sufficiently conservative to limit the likelihood of interference to wireless microphones. It states that because narrowband devices may operate only where there are three contiguous vacant TV channels, there will always be at least two TV channels available for immediate use by wireless microphones. It further states that the three contiguous channel requirement means there is a very low probability that narrowband devices will operate in more congested areas where wireless microphones used for electronic news gathering typically operate and that the key use case for narrowband white space devices is precision agriculture. Microsoft also notes that narrowband white space devices are limited to lower power than wideband fixed white space devices and to a 36 second per hour limit on channel occupancy. The Commission seeks comment on Microsoft's analysis and NAB's response in this regard. Are the existing rules regarding limited channel availability, low power,

and low channel occupancy sufficient to protect licensed wireless microphones if the Commission retains the once daily database re-check as suggested by Microsoft? Are there other safeguards that could be put in place to ensure licensed wireless microphones are protected if the Commission leaves the existing rule in place? Would limiting a daily re-check to only certain narrowband devices, e.g., battery powered devices, be a viable compromise to help improve the protection of wireless microphones? If so, how would such a delineation provide more protection than treating all narrowband white space devices in a consistent fashion? What effect would differing requirements for battery powered devices have on narrowband white space device design and cost?

*Mobile devices.* Mobile devices can be mounted on vehicles such as buses and farm equipment and may move around within a predetermined geo-fenced area within which the white space database has determined that one or more TV channels are available for the mobile device's use. The technical requirements for mobile devices are similar to those for fixed devices except narrowband, including maximum transmitter power, antenna gain and height limits and required separation distances from protected services, as well as the requirement to re-check the database at least once per day. Because of the technical similarities between fixed and mobile devices, the Commission believes that it would be appropriate to require mobile devices to comply with the same database re-check interval as fixed devices that operate in the TV bands to more effectively protect licensed wireless microphones. The Commission therefore proposes to require mobile devices to comply with the same hourly re-check interval the Commission is requiring for fixed devices in the TV bands. The Commission also proposes to require mobile devices to comply with the other requirements the Commission adopts for fixed devices (except narrowband) in the TV bands, specifically, the requirement to cease operation after two failed attempts to contact the white space database, i.e., 120 minutes, and the requirement to adjust their use of TV channels in accordance with wireless microphone scheduling information provided by the white space database for the two hour period beginning when the device last contacted the database. The

Commission also proposes that any modified rules would become effective six months after publication in the Federal Register.

The Commission seeks comment on these proposals. Should the Commission require mobile devices to comply with the same hourly re-check interval as fixed devices operating in the TV bands, or would a different interval be more appropriate? If so, what is the appropriate re-check interval? Is a more frequent re-check interval necessary to better protect licensed wireless microphones? Would it be difficult for mobile devices to contact the database at more frequent intervals since they could have their internet access temporarily blocked by trees or hills as they move? Would it be overly burdensome on white space database administrators to recalculate channel availability over a geo-fenced area on an hourly basis? Are any other rule changes necessary if the Commission changes the required re-check interval for mobile devices?

*Digital Equity and Inclusion.* Finally, the Commission, as part of its continuing effort to advance digital equity for all, including people of color, persons with disabilities, persons who live in rural or Tribal areas, and others who are or have been historically underserved, marginalized, or adversely affected by persistent poverty or inequality, invites comment on any equity-related considerations and benefits (if any) that may be associated with the proposals and issues discussed herein. Specifically, the Commission seeks comment on how our proposals may promote or inhibit advances in diversity, equity, inclusion, and accessibility, as well as the scope of the Commission's relevant legal authority.

*Initial regulatory flexibility analysis.* As required by the Regulatory Flexibility Act of 1980, as amended (RFA), the Commission has prepared this present Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on a substantial number of small entities by the policies and rules proposed in Unlicensed Operation in the Television Bands, Repurposed 600 MHz Band, 600 MHz Guard Bands and Duplex Gap, and Channel 37, Further Notice of Proposed Rule Making (*FNPRM*) in ET Docket No. 14-165. Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be



filed by the deadlines for comments on the FNPRM provided in paragraph 56 of the item. The Commission will send a copy of the FNPRM, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration (SBA). In addition, the FNPRM and IRFA (or summaries thereof) will be published in the *Federal Register*.

### **Need for, and Objectives of, the Proposed Rules**

The *FNPRM* seeks comment on how frequently narrowband and mobile white space devices must contact a database that determines the available operating channels at the devices' location.

### **Legal Basis**

The proposed action is taken pursuant to 4(i), 302, 303(b), (c), (e), (f), (r), and 307 of the Communications Act of 1934, as amended, and sections 6403 and 6407 of the Middle Class Tax Relief and Job Creation Act of 2012, Public Law 112-96, 126 Stat. 156, 47 U.S.C. 154(i), 302, 303(b), (c), (e), (f), (r), 307, 1452, 1454.

### **Description and Estimate of the Number of Small Entities to Which the Proposed Rules Will Apply**

The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the proposed rules, if adopted. The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction." In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act. A "small business concern" is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).

*Small Businesses, Small Organizations, Small Governmental Jurisdictions.* Our actions, over time, may affect small entities that are not easily categorized at present. The Commission therefore describes here, at the outset, three broad groups of small entities that could be directly affected herein. First, while there are industry specific size standards for small businesses that

are used in the regulatory flexibility analysis, according to data from the Small Business Administration's (SBA) Office of Advocacy, in general a small business is an independent business having fewer than 500 employees. These types of small businesses represent 99.9% of all businesses in the United States, which translates to 32.5 million businesses.

Next, the type of small entity described as a "small organization" is generally "any not-for-profit enterprise which is independently owned and operated and is not dominant in its field." The Internal Revenue Service (IRS) uses a revenue benchmark of \$50,000 or less to delineate its annual electronic filing requirements for small exempt organizations. Nationwide, for tax year 2018, there were approximately 571,709 small exempt organizations in the U.S. reporting revenues of \$50,000 or less according to the registration and tax data for exempt organizations available from the IRS.

Finally, the small entity described as a "small governmental jurisdiction" is defined generally as "governments of cities, counties, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand." U.S. Census Bureau data from the 2017 Census of Governments indicate that there were 90,075 local governmental jurisdictions consisting of general purpose governments and special purpose governments in the United States. Of this number there were 36,931 general purpose governments (county, municipal and town or township) with populations of less than 50,000 and 12,040 special purpose governments - independent school districts with enrollment populations of less than 50,000. Accordingly, based on the 2017 U.S. Census of Governments data, the Commission estimates that at least 48,971 entities fall into the category of "small governmental jurisdictions."

### **Radio and Television Broadcasting and Wireless Communications Equipment**

**Manufacturing.** This industry comprises establishments primarily engaged in manufacturing radio and television broadcast and wireless communications equipment. Examples of products made by these establishments are: transmitting and receiving antennas, cable television equipment, GPS equipment, pagers, cellular phones, mobile communications equipment, and

radio and television studio and broadcasting equipment. The SBA has established a small business size standard for this industry of 1,250 or fewer employees. U.S. Census Bureau data for 2012 show that 841 establishments operated in this industry in that year. Of that number, 828 establishments operated with fewer than 1,000 employees, 7 establishments operated with between 1,000 and 2,499 employees and 6 establishments operated with 2,500 or more employees. Based on this data, the Commission concludes that a majority of manufacturers in this industry are small.

**Television Broadcasting.** This Economic Census category “comprises establishments primarily engaged in broadcasting images together with sound.” These establishments operate television broadcast studios and facilities for the programming and transmission of programs to the public. These establishments also produce or transmit visual programming to affiliated broadcast television stations, which in turn broadcast the programs to the public on a predetermined schedule. Programming may originate in their own studio, from an affiliated network, or from external sources. The SBA has created the following small business size standard for such businesses: those having \$41.5 million or less in annual receipts. The 2012 Economic Census reports that 751 firms in this category operated in that year. Of that number, 656 had annual receipts of \$25,000,000 or less, and 25 had annual receipts between \$25,000,000 and \$49,999,999. Based on this data the Commission therefore estimates that the majority of commercial television broadcasters are small entities under the applicable SBA size standard. The Commission has estimated the number of licensed commercial television stations to be 1,368. According to Commission staff review of the BIA Kelsey Inc. Media Access Pro Television Database (BIA) on November 16, 2017, 1,258 stations (or about 91 percent) had revenues of \$38.5 million or less, and therefore these licensees qualified as small entities under the SBA definition. In addition, the Commission has estimated the number of licensed noncommercial educational television stations to be 390. Notwithstanding, the Commission does not compile and otherwise does not have access to information on the revenue of NCE

stations that would permit it to determine how many such stations would qualify as small entities. There are also 2,246 low power television stations, including Class A stations (LPTV), and 3,543 TV translator stations. Given the nature of these services, the Commission will presume that all of these entities qualify as small entities under the above SBA small business size standard.

The Commission notes, however, that in assessing whether a business concern qualifies as “small” under the above definition, business (control) affiliations must be included. Our estimate, therefore, likely overstates the number of small entities that might be affected by our action, because the revenue figure on which it is based does not include or aggregate revenues from affiliated companies. In addition, another element of the definition of “small business” requires that an entity not be dominant in its field of operation. The Commission is unable at this time to define or quantify the criteria that would establish whether a specific television broadcast station is dominant in its field of operation. Accordingly, the estimate of small businesses to which rules may apply does not exclude any television station from the definition of a small business on this basis and is therefore possibly over-inclusive. Also, as noted above, an additional element of the definition of “small business” is that the entity must be independently owned and operated. The Commission notes that it is difficult at times to assess these criteria in the context of media entities and its estimates of small businesses to which they apply may be over-inclusive to this extent.

### **Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements for Small Entities**

White space devices are unlicensed devices that operate in the TV bands at locations where frequencies are not in use by licensed services. These devices may be either fixed or portable. To prevent harmful interference to broadcast television stations and other authorized users of these bands, white space devices must obtain a list of available TV channels that may be used at their location from databases administered by private entities selected by the Commission. The

database determines channel availability using protection criteria specified in the rules.

Most RF transmitting equipment, including white space devices, must be authorized through the certification procedure. Certification is an equipment authorization issued by a designated Telecommunication Certification Body (TCB) based on an application and test data submitted by the responsible party (e.g., the manufacturer or importer). The FNPRM does not propose to change the authorization procedure for white space devices, or the requirement for them to obtain a list of available channels from a database. It seeks comment on possible changes to the requirement on how frequently narrowband and mobile white space devices must contact a database that determines channel availability for white space devices. Current rules require these devices to re-check the database at least once daily, while the Commission has decided to require other white space devices to re-check the database once per hour.

### **Steps Taken to Minimize the Significant Economic Impact on Small Entities, and Significant Alternatives Considered**

The RFA requires an agency to describe any significant, specifically small business, alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): “(1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities; (3) the use of performance rather than design standards; and (4) an exemption from coverage of the rule, or any part thereof, for such small entities.”

There are currently no approved narrowband or mobile white space devices, so changing the database re-check interval would have no immediate impact on device manufacturers. If manufacturers develop devices that comply with the current daily re-check interval and the Commission subsequently decreases the interval (e.g., to once per hour), manufacturers would have to modify devices to comply. Because a device’s database re-check interval would be programmed in software, such modifications would not be burdensome on manufacturers.

## **Federal Rules that May Duplicate, Overlap, or Conflict with the Proposed Rules**

None.

## **ORDERING CLAUSES**

Accordingly, IT IS ORDERED that, pursuant to the authority contained in Sections 4(i), 302, 303(b), (c), (e), (f), (r), and 307 of the Communications Act of 1934, as amended, and sections 6403 and 6407 of the Middle Class Tax Relief and Job Creation Act of 2012, Public Law No. 112-96, 126 Stat. 156, 47 U.S.C. 154(i), 302, 303(b), (c), (e), (f), (r), 307, 1452, 1454, this Second Order on Reconsideration, Further Notice of Proposed Rulemaking, and Order IS HEREBY ADOPTED.

IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of the Second Order on Reconsideration, Further Notice of Proposed Rulemaking, and Order, including the Initial Regulatory Flexibility Analysis and Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the U.S. Small Business Administration.

Federal Communications Commission.

**Marlene Dortch,**

*Secretary.*

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